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PSYCHOLOGY

FOUR ARTICLES

BY

DR. WILLIAM T. HARRIS,
National Commissioner of Education.

"Two Kinds of Psychology."

"How Symbolic Thinking Grows Into Logical
Thinking."

"How Imitation Becomes Originality."

"How to Educate the Feelings and Emotions
Through the Intellect and the Will."

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of school methods has discontinued the use of corporal punishment and substituted far better methods of control. More insight into the significance of the studies pursued in school has given the teacher power to educate the pupil into the true view of the world. Correct discipline and correct instruction educate the heart and there is not, nor ever has been, any other way of educating the heart.

true view he had obeyed only from external authority; now he obeys from conviction and is free. This is regeneration.

This theoretic and practical explanation of the cultivation of the heart shows the great function performed by a view of the world. All teaching must presuppose a view of the world. The highest view of the world is that of altruism, the adoption of the spirit wherein each person endeavors to benefit all others, and willingly participates in the work of the world and shares its fruits.

From this point of view it will be seen that the governing of the will is a substantial good, even if it is accomplished through punishment. The community of the school cannot exist if the pupils are permitted to exercise their evil propensities without restraint.

Quarreling and fighting destroy the educational quality in the school discipline and interfere fatally with the intellectual instruction of the school. Corporal punishment stands at the bottom of the list of school incentives, but it is and must be the last resort in order to sustain authority. The progress

Two Kinds of Psychology.

Psychology for teachers should enable the teacher to diagnose the methods of thinking and observation in use by the child. It should show which one of the three stages of thought the child thinks in. Whether the child thinks relations as mere accidents and supposes the objects which he sees, to have substantial being; or whether the youth thinks objects as in a relation of dependence upon other things—in other words, whether he thinks forces as being more important than things. Forces make things and have to be understood in order to come to a true knowledge of things. The second stage of thinking deals with forces explaining things.

The third stage of thinking deals with a view of the world, and undertakes to explain all objects, forces, and processes by its highest principle. This explanation of the stages of thought belongs to rational psychology. There are two phases of

psychology; one the rational psychology which knows by introspection and by philosophical thought upon the data of of its introspection, and the other, which is called empirical psychology, or physiology, or child study, or "the new psychology." This latter kind of psychology may be called scientific psychology, and Professor Munsterberg in his article in the *Atlantic Monthly* calls it simple psychology and says that psychology can be of no use to teachers. Inasmuch as rational psychology is the only science that deals with the enumeration and discrimination of the stages of development of the thinking powers, the will, and the feelings, Professor Munsterberg is right in saying that physiological psychology does not help in this important field of education. Empirical psychology, however, may be very serviceable in what we call pathology of education; it may discover the bodily actions and the limitations of study as time and intensity; it may in fact be very useful in making up the school program, the length of recitation, the number of hours of study per day, the amount and

feelings and emotions again. When a new thought or view becomes familiar it is used as a rule of action more and more unconsciously. Finally it becomes heart and is acted upon as if it were a mere impulse. So the will does deeds until its action becomes habitual and spontaneous; then one acts from the heart. The school insists first on the right practice; it says, "Never mind your opinion as to what is right or wrong, you must act and forbear to act in accordance with the rule established here as necessary for the existence of the school." The school is an institution, and cannot exist except on condition that pupils cooperate both with each other and with the teacher. The first thing is to obey the rule of order and inhibit one's tendency to make discord. But the good school at once commences operation upon the intellect of the pupil in order to bring him into agreement with the higher purpose which makes the individual support the institution in which he is placed. A true view of the world, when it becomes a conviction, completes the education of the heart. Before the pupil had reached the

everybody gains good by self sacrifice and fortitude under persecution, then gradually his intellectual view changes and he discovers the mistake of his former moral principle. He adopts a new one: Do good to those who do evil to you. Now his new principle is in accordance with the habit which the teacher's authority has already imposed upon his will. He is obliged to practice forbearance towards others who attack him, and he now does this in the full conviction that it is right. Speedily it becomes a habit—a second nature—and he finds that his immediate impulse on a given occasion is to act with a good heart and show benevolence and altruistic feelings and emotions. Now he has arrived at regeneration. Through a change of principles adopted by his intellect and a change of habits adopted by his will, he has attained a good heart.

The important thing to see is not only that the heart expresses itself in intellectual ideas and deeds of the will—that is to say, in thoughts and volitions,—but also that thoughts and volitions, the intellect and the will, become, through habit,

kind of exercise, sleep and diet. These are matters in which the body is concerned as well as the mind, and in order to get the best results the program should be carefully made with reference to the amount of work which the bodily conditions will permit without reaching the point of fatigue. But no amount of brain study could discover anything with regard to the progress of the thinking power from the stage of seeing all objects as independent existences, over into the stage in which all objects are seen as relative or dependent on other existences; or, in fine, the elevation of the mind to the third stage of thinking wherein these independent objects are seen in an including whole, or in a view of the world.

Rational psychology furnishes, therefore, the affirmative side, or the development of the mind in itself, while the so-called scientific psychology looks at the bodily side and its aid or hindrance to the growth of the mind. Rational psychology, therefore, is not a substitute for physiological psychology, nor is the latter a substitute for the former. A

school of psychology should have both sides represented.

One of the most important of all studies of psychology in education relates to arrested development. It is a very common fault in our public schools to find teachers who drill young children so thoroughly in the processes of arithmetic that they bring the mind into a habit of enumerating all things before them. They love to count better than to think of causal relations.

A little boy was leaning forward in his seat at church and appeared to be deeply interested in what the preacher was saying. But it turned out that he was only counting the fringes on the curtain back of the pulpit.

A study of many shades of color at the age of six to nine years old may easily train the mind into a habit of noticing only colors in objects at the expense of shape and form and structure. Arrested development on the stage of number or color, or any other abstract phase of things, is injurious to the mind. More verbal memory, which is an arrest of the mind on the sound and form of words

theory on which the civilization of the world is founded. He shows that the individual is related to his community as giver and receiver. He gives a small gift, namely the products of his industry to the world, and he receives an infinite gift by having a share in the productions of all the industries of the world, its food, clothing, and shelter, made for him by others, and the science produced by observations and reflections of his fellow men, past and present, to say nothing of the literature and art and means of amusement and spiritual growth. In short, he is taught the doctrine of the dependence of the individual upon the social whole for all that makes life worth living. This properly cannot be taught to the pupil by sentimental moralizing; it must be taught and should be taught by all teachers in teaching the branches of the course of study, and in creating a public opinion in the school which makes the child almost or quite self governed. Supposing that the intellectual view of the child is changed and he sees by examples of the greatest men that self-sacrifice is essential to success, and he sees that

direct influence of authority and penalty the teacher may secure a change of the pupil's will; namely, he may learn to inhibit his tendency to fight. He will eventually acquire the habit of holding himself back from his tendency to fight. Perhaps the pupil will form a habit of this kind which will last him through life. But if his intellect remains unconvinced and he still thinks that it is the best theory to return to others the evil which they do to us, he will gradually recover his old habit of fighting and quarreling when he comes to deal with the world. The education of the heart had proceeded only half way. The will had been educated into a habit, but the intellect was left with a theory which opposed the habit formed by the will. A contradiction has been left in the mind of the child; he has a habit of acting which does not agree with his intellectual conviction.

Now to become complete the intellect should be educated into the same view that the will has already been educated into by the direct authority of the teacher. The teacher shows the child the true

without considering the sense or meaning, is also dangerous. To concentrate the mind of youth from fourteen to eighteen years of age on the grammatical form and structure of sentences may also arrest development in such a way that the youth leaves school without having acquired the ability to lose sight of grammatical structure and think of the great thoughts, the literary style and finish.

The kindergarten has its danger of arrested development. Froebel's system of drawing if carried out to its full extent, so that all the possibilities of symmetry are exhausted, will fix the mind and arrest it on a lower stage of art. The mind will be haunted with symmetry. Symmetrical forms will get in the way, and it cannot express freedom of the will or aspirations of the soul. You know that Perugino, the teacher of Raphael, had arrested his development on the stage of symmetry and that his pictures have a mechanical appearance, one side being balanced by another side just as the right hand balances the left hand. Raphael, his pupil, had great dif-

ficulty in overcoming this false tendency which he received from his master. Even his great picture of the Transfiguration has too much symmetry. Michael Angelo, who went deeper in his art and represented the unity given by a mental purpose in his figures rather than the unity given by symmetry, did very much to help Raphael in freeing himself from his slavery to the idea of symmetry.

The kindergarten drawing in beginning with symmetry is all right. It is wrong when carried so far as to produce an arrest of development. Almost all these things are good if they are given in due proportion. It is dangerous when the teacher thinks that because a thing is good it should be given to the pupil without stint. Even the work in the kindergarten, known as pricking or repousse, is good if given in single lessons once a month throughout the year.

Froebel's wonderful studies on the educational values of elementary geometric form led him to look for a series of solids and surfaces which began with the round and proceeded towards the angular and then returned towards the round again.

and by a habit or second nature. We then act spontaneously.

In short both the intellect and the will can be changed in views and practices, and the result is a second nature, or what is called a new heart. The heart is regenerated.

Now let us follow out this analysis by seeing the effect of educating either the will or the intellect separately. Let us suppose that the pupil who comes to our school for the first time is taken in the act of fighting with a fellow pupil. We remonstrate with him and he informs us that his parents have taught him to "give others as good as they send." He believes in returning evil for evil. We all know that this principle causes us to desire to give others a little more evil every time than they have given us. The result of the adoption of this principle is that a man goes about the world with a chip on his shoulder. As a teacher we commence at once the education of the pupil's will. We inform him that any further action upon the basis of his principle must cease. If he fights he will be punished in this school. By

The heart is the undeveloped mind; when it develops, it grows in two directions, on the one hand towards the intellect, and on the other hand towards the will. The emotions and passions grow towards the will and the sensations grow towards the intellect. The acorn contains the whole oak, but as undeveloped. When the oak grows it sends a root downwards into the ground and a stalk upwards into the light, to become the trunk of the tree with its branches. The heart has not yet polarized into intellect and will.

On the other hand when we get a new view in the intellect and express it often and in a great variety of ways, the view gradually becomes our form of seeing. It becomes immediate and thus becomes a feeling. We apply our view more and more instinctively with less and less reflection, and finally we have it ready on every new occasion almost or quite in the form of a feeling or sensation. Again when we adopt a new mode of action by our will, at first every repetition of it requires careful effort. It becomes easier and easier with practice, and by

His succession of the globe, the cylinder, and the cube, and then the flattening of the corners of the cube so as to produce what he calls the 6-8 solid, gives an excellent series. But when he tries to find the return to the globe through the dodek-ahedron or the icosahedron, he goes beyond the child's capacity and tempts the kindergartner to dwell on these forms so long that it produces a kind of arrest of development in the child's mind. The child gets a habit of analyzing all physical forms and their parts to such a degree that the analysis gets in the way of his thinking the causal relations, the forces manifested, and the purposes aimed at in the production of the forms.

It is evident that both kinds of psychology are needed in this observation of arrested development. In the first place, one must be familiar with the manifestation of the different stages of the growth of thought and be ready to recognize any case of the enslavement of the mind by an abstraction such as number, color, geometric form, symmetry, grammatical distinctions, or whatever it may be. Child-study should arm itself

with this knowledge of rational psychology and then detect the various forms of arrest, noting the amount of time which it has taken to produce this arrest of development. It can formulate a great many useful rules which will be of practical aid to the teacher in curing her pupil of one-sided development.

cesses and defects of various kinds. Now it is evident that if it be true that the exercise of a good heart educates it in goodness, the exercise of a bad heart will increase and fix it in evil. For as the child inherits evil as well as good the simple exercise of his heart will not improve him but will keep him in the same state of feelings and emotions as before, perhaps with an additional tendency to fix the bad and make it more difficult to correct it.

With this view of the case we see that the problem of educating the heart is not a simple one. It will not be possible to cultivate the heart directly because the exercise of the heart without the intellect and the will is simply the indulgence of the emotions.

When I first began to see the conditions of this problem—it was in 1884 at the Madison meeting of the National Educational Association—I saw that it was necessary to educate the heart through the intellect and the will, both of which we know may be developed by direct means.

by exercising it. For how else could it be done? But I have never known this suggestion to bear any fruit. If exercising the heart does not educate it, then the advice of the would-be moral reformers is not sufficiently well defined for teachers to follow. For the education of the intellect is accomplished by exercising the intellect which the pupil already possesses. If we attempt to carry out the analogy we should say that the heart must be educated by exercising the feelings and emotions which the pupil already possesses.

Here we come upon an insight into the question, with what feelings and emotions does the pupil begin? The answer must be that he begins with a stock of inherited proclivities and propensities. These at first constitute his heart. But the child inherits not only the good proclivities and propensities of his long line of ancestors, but he inherits also bad feelings and emotions. His heart is not altogether a good heart; it overflows not only in goodness but also at times more or less frequent, in selfishness, rancor, bitterness, cowardliness; in short in ex-

How Symbolic Thinking Grows Into Logical Thinking.

The following abstract of one of Dr. W. T. Harris' lectures in the school of psychology, recently held in Chicago, will interest many of our readers who are studying the educative value of things in teaching children to think. It will be especially valuable to mothers of young children.

The earlier period of infancy, say up to the age of six, with average children, has been called the symbolic stage; while the later stage, which begins somewhere about six and lasts through life, is called the "conventional" stage. I have given these names to the periods of intellectual development in infancy, because they will direct the mind of the kindergartner towards the philosophy of Froebel, who treats nature and human life from the point of view of symbolism.

Froebel was attracted towards play because it had something in it resembling the form of symbolism. In fact, to mimic the actions of another is in a certain sense, to make a symbol of them.

Play "makes believe" that something is something else, and thus symbolizes it. "Make believe that this stick is a horse;" the stick is to symbolize the horse. "Build a house out of these blocks;" the pile of blocks is to be a symbol of the house.

It is true that we commonly use the word *symbolic* in a more restricted sense, namely, the use of the material object to present the invisible spiritual object.

The child begins by perceiving sense-objects and mimics them in play. Gradually he discovers their chains of causality. Each object is in a chain of causality; it is derived from something else, and, when it changes, it passes on into something else.

The child learns to think more and more extent to the object which he sees. He learns to add to it a larger and larger extent of the chain of causality that belongs to it.

A fact is a small matter to the infantile mind as compared with the same fact as thought with the scientific man. For the fact is at first a little fragment broken off from a long chain of causal

How to Educate the Feelings and Emotions Through the Intellect and the Will.*

DR. WM. T. HARRIS,
National Commissioner of Education.

I have taken for the topic of this closing lecture, "How to Educate the Feelings and the Emotions through the Intellect and the Will."

Inasmuch as the feelings and emotions constitute the heart, my question is in short, How to educate the heart? Over and over again we have heard the maxim repeated to us teachers, "Educate the heart, educate the heart." Many speeches made by good people who are not engaged in the business of teaching urge upon us the education of the heart, and guard us against the danger of educating the intellect without educating the heart. The maxim is urged upon us as if it were perfectly easy to follow its advice. We all know that the intellect ~~can~~ be educated by exercising it. It is assumed that we can educate the heart

*Closing Lecture at the School of Psychology, Chicago Kindergarten College.

them. The child who wishes a real cutting scythe is arrested in his development if he is made to play at mowing with a crooked stick.

The child should not be hastened unduly in his progress out of symbolism. As long as he has interest and a real delight in the symbol he should be indulged in its employment. So, too, with regard to imitation. The judicious teacher will not seek to deepen the child's insight into motives and purposes and arouse a too early feeling of responsibility in his mind. The pressure of the society in which the child lives, a society mostly of grown persons possessed of a deep feeling of responsibility, will hasten the child's development into a view of moral purposes quite soon enough. But, of course, there may be exceptions in this case.

action by the feeble mind of infant or savage. But experience keeps making additions to the fact before and after it. It places links of causation before it and links of effect after it, and thus the fact grows to be a big fact.

Now the child who can grasp only so small a piece of fact, or in other words, whose facts are so small in compass, goes by external appearances and does not see the essential nature of the fact. The child sees the gun with which his father shoots and thinks that a stick cut out in the external resemblance of a gun will do what the gun does. The essential thing about the gun is the steel tube, the powder and shot and the method of exploding the powder. The child's fact contains none of these items. His fact is a symbolic fact, rather than a real fact. We see that to get at a reality, we must have the chain of causality.

Play undertakes to reproduce the external semblance of the fact without the causal chain that makes the essential element in the fact. The farmer mows with a steel scythe and cuts grass. The child mows with a wooden scythe and cuts no

grass. He merely "makes believe" to cut grass. Now it is evident that the difference between play and work is that play reproduces some external shallow features of the fact, whereas the real fact contains the whole causal process.

What is more important in the play, however, is that the child feels his own causality and is conscious that he can produce something, even though it is only a mere appearance of work; even though it is a superficial, external fragment of the great fact which constitutes the work of the mature man. He feels that he can realize an ideal of his own, though it is not as potent an ideal as that of a man.

To illustrate this process of growth, consider the chain of causality involved in thinking the familiar object bread. This illustration is used by Professor Noire. Going backward toward the origin of bread, we have successive steps of baking, kneading the dough, mixing the meal or flour with yeast, lard, butter, and other ingredients; the grinding of the grain and sifting the meal; the harvesting of the grain with all its details of cut-

and songs which describe the external action delight the child in his symbolic stage of culture, but he rapidly grows out of this stage and requires scope for the exercise of his freedom. He wishes to make variations of his own from the action imitated. He continually becomes less mechanical and more spontaneous. The teacher makes a mistake if she holds back the pupil upon the field of mere mechanical imitation when he has begun to interest himself in the motives and purposes of the action. Such restraint holds back growing freedom and individuality and tries to stifle it. Doubtless this act of stifling is very prevalent in primary schools and kindergartens under the control of teachers or kindergartners who have not been led to appreciate the importance of original action.

Even what is called invention in the kindergarten, namely, the making of forms of beauty or constructing with blocks architectural forms, is often a kind of restraint upon children who are passing out of the symbolic stage of mind, for they desire to make real objects and not make feeble imitations of

and thereby proving his own causative power. By this act of imitation he therefore grows towards the feeling of responsibility. The act as performed by another is none of his. The act as imitated by himself is his own, and he is responsible for it. Imitation is therefore an act of the will just as symbolism or thinking by definitions is an act of the intellect. But the first beginnings of imitation deal with the merest externalities of the action imitated. It is the dialectic of imitation to leave these externals and strive towards a more and more internal relation of that which it imitates. The child seizes step after step the elements of causation. He seizes the motives and purposes of the action and he sees the logical necessity of these purposes and motives. He connects them more and more with his own fundamental principle of action. At last when he performs the imitated act as an expression of his own purposes and convictions, imitation has become originality.

These considerations furnish us hints for interpreting and guiding imitation as an educative means. Mere pantomime

ting, binding sheaves, threshing, etc.; the earlier processes of plowing, harrowing, sowing the grain; its growth dependent on rain and sunshine. Each one of these links in the chain has side relations to other chains of causality; for example, the yeast put into the bread connects it with hops or some other ferment or effervescent; the lard connects bread to the series of ideas involved in pork raising; the salt, with salt manufacture; the baking, with the structure of the oven and the fuel. So long as anything is not yet understood, the word expressing it is a partially blind symbol.

The retrograde series towards the origin is matched with a progressive series towards the future use of the bread. There is the preparation for the table, the set meals, the eating and digestion, the sustenance of life, the strength acquired, the work accomplished by means of it, etc.

This chain of causation is symbolized in the story of the House that Jack Built and similar inventions.

In play the child lets one thing stand for another, and makes believe, for in-

stance, that this mud is dough; it can be dried or baked, too. But here the chain of causality departs from that of bread. The child cannot eat the mud loaf. The mud was not made of meal, flour, and yeast, and lard, and salt, as the dough was.

The child at first understands a very small fragment of the entire process of production of a thing. He pretends that a crooked stick is a scythe. But he is helped by his plaything to understand what is necessary for the real object, the scythe. It must have a blade; and he has a wooden one fastened to his crooked stick. Then he becomes impressed with the necessity of having a blade that will cut. If he gets this he gets a real scythe and his play has converted itself into work; this is what the higher philosophy calls a dialectic process.

It is the dialectic process of play that it end by becoming work. Carry out the practice of anything and its natural results are its dialectic. The child starts with a stick for a horse and ends only with getting a real horse to ride and drive. There were many steps on the way. First a horse's head to his stick; then a bridle

The child outgrows his feeble state of mind wherein he takes the dead result for the true reality, and gradually acquires the ability to think the forces and powers, the causal energies which bring things into existence and transform them into others.

Imitation has the same course of development as the symbolic thought which passes over into thinking by definitions. At first imitation copies the merest external appearances, but it gradually gets possession of the motives and purposes of the action, and finally the imitator may arrive at the fundamental principle which originates the action. Then the imitator finds no longer his guide and rule in an external model. He finds the rule for his action in his own mind and becomes original.

The child imitates an external object. It may be another person or it may be an animal or a thing. A boy can impersonate a steam engine, or a bear, or his elder brother, a soldier, or a laborer. His imitation is, as we have said, an act of assimilation; an act of making for himself that which he sees made by another

We have discussed the difference between the symbolic thinking and the thinking which uses definitions. The symbolic is largely a mental picture, but the definition is not a picture; it is a rule for the formation of pictures. No definition can be realized in one picture, for the definition gives the rule for constructing a great variety of different mental pictures, each one of which accords with the rule; for the definition describes the method of construction not only of pictures in the mind, but it describes the objective process by which the object defined comes to exist in the external world. It is, therefore, a rule not only for mental construction, but for the construction of objective reality. When the mind leaves the mental picture and deals with definitions, it attains to a superior and more accurate knowledge of the reality which exists in the world; for the force which makes things is more real than the things which it makes. The process of producing things is a universal, whose object made is only a particular. The universal is a living process while the object is a dead result.

and a whip; then a chair for a horse and wagon; then a playmate harnessed as a horse; then a hobby horse with all the limbs of a horse and with close imitation of external appearance; then perhaps a dog or a goat harnessed to a toy wagon; then the real horse.

How Imitation Becomes Originality.*

Imitation partakes of the nature of symbolizing, and it forms a very large element in play. It marks the first beginnings of education. The child who begins to imitate gives evidence of self-consciousness. He notices the activity of another being, and recognizes that action as proceeding from an energy or will power akin to the power which he possesses. He proves to himself the possession of that power by imitating the action in which he is interested. It is evident therefore, that imitation is a kind of spiritual assimilation, a digesting and making one's own of the act of another. Of course the purpose is not conscious, but it is really an act of self-consciousness, all the same, because the child recognizes the act of imitation as a revelation of his self.

Whenever children show a passionate interest in discovering properties and

qualities in things, it is high time for them to leave the kindergarten, and take up the work of learning conventional signs, reading, writing, arithmetic, and the technical terms of geography, etc. For to notice properties and qualities is to think in the third figure of the syllogism. It first notes classes and then, by the special marks and properties which it observes, it discovers sub-classes and more minute species.

So, too; whenever the child loves to trace chains of causation by noticing the effect of other objects upon the thing which he is studying, and when he loves to trace out the effects of the function of his object upon its environment, we note the same ripeness and maturity of the child that enables him to take up work beyond the scope of the kindergarten. Such a child cannot find symbolic plays and games perfectly congenial to him. He has attained a higher stage of individual culture, and seeks the gratification which comes from testing his power of analysis on the external world. He has come to a stage of thinking above the symbolic.

*Abstract of lecture by W. T. Harris at School of Psychology, Kindergarten College, Chicago, April 5, 1899.

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